

### Claims

1        1.       Safety apparatus to be added to a winged intravenous infusion  
2 assembly, said infusion assembly having a needle attached to one end of  
3 a body and a hub at the other end of said body, a pair of wings extending  
4 from said body between said one and other ends, said apparatus  
5 comprising:

6                a base adapted to be matingly fitted onto said body, said base  
7 having at least one pair of arms that firmly embraces a portion of said body  
8 or said hub when said base is fitted to said body; and

9                a housing hingedly attached to said base, said housing being  
10 pivotable to a position in substantial alignment along the longitudinal axis  
11 of said base for enveloping said needle.

1        2.       Safety apparatus of claim 1, further comprising:

2                locking means integral to said housing for fixedly retaining said  
3 needle relative to said housing once said housing is pivoted substantially  
4 to said alignment position.

1        3.       Safety apparatus of claim 2, wherein said locking means comprises  
2 a hook that snaps over and retains said needle within said housing when  
3 said housing is pivoted substantially to said alignment position.

1        4.       Safety apparatus of claim 2, wherein said locking means comprises  
2 at least one pair of fingers coacting to prevent said needle from being  
3 removed from said housing once said housing envelops said needle.

1 5. Safety apparatus of claim 1, wherein said base includes at least one  
2 locking means and said housing includes at least an other locking means;  
3 and

4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said base when said needle is  
6 enveloped by said housing.

1 6. Safety apparatus of claim 1, wherein said base includes a pair of  
2 first locking means and said housing includes a corresponding pair of  
3 second locking means, said first and second pairs of locking means  
4 cooperating to maintain said housing relative to said base when said  
5 housing is pivoted to said alignment position.

1 7. Safety apparatus of claim 1, wherein said base is configured to have  
2 an interior circumference surface that comes into intimate contact with a  
3 substantial portion of the outer circumference surface of said body of said  
4 infusion assembly when said base is fitted onto said body..

1 8. Safety apparatus of claim 7, wherein said interior circumference  
2 surface of said base is coated with an adhesive means for bonding said  
3 base to said body of said infusion assembly once said base is matingly  
4 fitted to said body.

1 9. Safety apparatus of claim 1, wherein said base comprises two pairs  
2 of arms, one of said pairs of arms embracing said hub of said body while

3 the other of said pairs of arms embracing the portion of said body  
4 separating said wings from said needle.

1 10. Safety apparatus of claim 1, wherein said base comprises a tubular  
2 portion that slidably inserts over an end portion of said body separating  
3 said wings from said needle to thereby matingly fit said base to said body.

1 11. Safety apparatus of claim 10, wherein said base comprises a pair of  
2 arms extending from the end of said base remote from said tubular portion,  
3 said pair of arms snappingly fitted over said hub to securely embrace said  
4 hub after said tubular portion is fully mated to said end portion of said body  
5 of said infusion assembly.

1 12. Safety apparatus of claim 1, wherein said housing comprises a  
2 groove extending substantially along the length of said housing, said  
3 groove being dimensioned to have a cross section that is slightly smaller  
4 than the cross section of said needle so that when said housing is pivoted  
5 to said alignment position, said needle is pressed into said groove and is  
6 fittingly enveloped thereby.

1 13. A method of preventing a contaminated needle of a winged  
2 intravenous infusion assembly from being exposed to the environment,  
3 said infusion assembly having a body from which said needle extends, a  
4 pair of wings extending from said body perpendicularly to said needle, said  
5 method comprising the steps of:

6            mating a safety device to said body of said assembly, said safety  
7            device including a base having at least one pair of arms that firmly  
8            embraces a portion of said body, said safety device further having a  
9            housing hingedly extending from said base; and  
10           pivoting said housing to a position in substantial alignment along the  
11           longitudinal axis of said base to envelop said needle.

1           14.    Method of claim 13, further comprising the step of:  
2                  providing locking means integral to said housing for fixedly retaining  
3           said needle relative to said housing once said housing is pivoted  
4           substantially to said alignment position.

1           15.    Method of claim 14, wherein said locking means comprises a hook  
2           that retains said needle within said housing when said housing is pivoted  
3           substantially to said alignment position.

1           16.    Method of claim 14, wherein said locking means comprises at least  
2           one pair of fingers coacting to prevent said needle from being removed  
3           from said housing once said housing is pivoted to envelop said needle.

1           17.    Method of claim 13, further comprising the step of:  
2                  forming a groove substantially along the length of said housing, said  
3           groove being dimensioned to have a cross section slightly smaller than the  
4           cross section of said needle so that when said housing is pivoted to said  
5           alignment position, said needle is pressed into said groove and is fittingly  
6           enveloped thereby.

1 18. Method of claim 13, further comprising the step of:  
2 providing at least one locking means at said base and at least an  
3 other locking means at said housing;  
4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said base when said housing is  
6 pivoted to envelop said needle.

1 19. Method of claim 13, further comprising the step of:  
2 providing a pair of first locking means at said base and a  
3 corresponding pair of second locking means at said housing, said first and  
4 second pairs of locking means cooperating to maintain said housing  
5 relative to said base when said housing is pivoted to envelop said needle.

1 20. Method of claim 13, further comprising the step of:  
2 configuring said base to have an interior circumference surface that  
3 comes into intimate contact with a substantial portion of the outer  
4 circumference surface of said body of said infusion assembly when said  
5 base is fitted onto said body.

1 21. Method of claim 20, further comprising the step of:  
2 coating said interior circumference surface of said base with an  
3 adhesive means so that said base is bonded to said body of said infusion  
4 assembly once said base matingly fits over said body.

1 22. Method of claim 13, further comprising the step of:  
2 providing said base with two pairs of arms, one of said pair of arms  
3 being provided for embracing said hub of said body while the other of said  
4 pair of arms being provided for embracing the portion of said body  
5 separating said wings from said needle.

1 23. Method of claim 13, further comprising the step of:  
2 providing at said base a tubular portion that slidably fits over an end  
3 portion of said body to thereby matingly fit said base to said body.

1 24. Safety apparatus, comprising:  
2 a base adapted to fit onto the body of an intravenous device having  
3 one end from which a needle extends and an other end to which a tubing  
4 is connected; and  
5 a housing hingedly attached to said base, said housing being  
6 pivotable to a position in substantial alignment along the longitudinal axis  
7 of said base so as to envelop said needle.

1 25. Safety apparatus of claim 24, wherein said base is configured to  
2 have an interior circumference surface that comes into intimate contact  
3 with a substantial portion of the outer circumference surface of said body.

1 26. Safety apparatus of claim 25, wherein said interior circumference  
2 surface of said base is coated with an adhesive means so that said base  
3 is bonded to said body of said intravenous device once said base comes  
4 into intimate contact with the outer circumference surface of said body.

1 27. Safety apparatus of claim 24, further comprising:  
2 locking means integrated to said housing for fixedly retaining said  
3 needle within said housing once said needle is enveloped by said housing.

1 28. Safety apparatus of claim 27, wherein said locking means comprises  
2 a hook that snaps over and retains said needle within said housing when  
3 said housing is pivoted substantially to said alignment position.

1 29. Safety apparatus of claim 27, wherein said locking means comprises  
2 at least one pair of fingers coacting to prevent said needle from being  
3 removed from said housing once said housing is pivoted to envelop said  
4 needle.

1 30. Safety apparatus of claim 27, wherein said base includes at least  
2 one locking means and said housing includes at least an other locking  
3 means; and

4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said base when said housing is  
6 pivoted to envelop said needle.

1 31. Safety apparatus of claim 24, wherein said base comprises at least  
2 one pair of arms for embracing said body to thereby firmly secure said  
3 base to said body of said intravenous device.

1 32. Safety apparatus of claim 24, wherein said base comprises a tubular  
2 portion that slidably fits over an end portion of said body of said  
3 intravenous device.

1 33. Safety apparatus of claim 32, wherein said base comprises a pair of  
2 arms extending from the end of said base remote from said tubular portion,  
3 said pair of arms snappingly fitted over an other portion of said body after  
4 said tubular portion is fully mated to said end portion of said body of said  
5 intravenous device.

1 34. Safety apparatus to be used with an intravenous infusion device to  
2 prevent a contaminated needle of said infusion device from being exposed  
3 to the environment, comprising:

4 a base adapted to be matingly fitted to the body of said infusion  
5 device whereto said needle is attached, said base being configured to  
6 have an interior circumference surface that comes into intimate contact  
7 with a substantial portion of the outer circumference surface of said body  
8 when said base is fitted to said body;

9 a housing hingedly attached to said base, said housing being  
10 pivotable to a position in substantial alignment along the longitudinal axis  
11 of said base for enveloping said needle; and

12 locking means integrated to said housing for fixedly retaining said  
13 needle within said housing once said needle is enveloped by said housing.



1 35. Safety apparatus of claim 34, wherein said base having at least one  
2 pair of arms that firmly embraces a portion of said body when said base is  
3 fitted to said body.

1 36. Safety apparatus of claim 34, wherein said locking means comprises  
2 a hook that retains said needle within said housing once said housing is  
3 pivoted substantially to said alignment position.

1 37. Safety apparatus of claim 34, wherein said base comprises a tubular  
2 portion that slidably fits over an end portion of said body of said infusion  
3 device.

1 38. Safety apparatus of claim 34, wherein said interior circumference  
2 surface of said base is coated with an adhesive means for bonding said  
3 base to said body of said device when said base is fitted to said body.

1 39. An intravenous device, comprising:  
2 a body having one end from which a needle extends and an other end to  
3 which a tubing is connected; and  
4 a housing hingedly attached to said one end of said body, said housing  
5 being pivotable to a position in substantial alignment along the longitudinal axis  
6 of said body so as to envelop said needle.

1 40. Intravenous device of claim 39, further comprising:  
2 locking means integrated to said housing for fixedly retaining said needle  
3 within said housing once said needle is enveloped by said housing.

1 41. Intravenous device of claim 40, wherein said locking means comprises  
2 a hook that snaps over and retains said needle within said housing when said  
3 housing is pivoted substantially to said alignment position.

1 42. Intravenous device of claim 40, wherein said locking means comprises  
2 at least one pair of fingers coacting to prevent said needle from being removed  
3 from said housing once said housing is pivoted to envelop said needle.

1 43. Intravenous device of claim 40, wherein said one end of said body  
2 includes at least one locking means and said housing includes at least an other  
3 locking means; and

4 wherein said one and other locking means coact with each other for  
5 fixedly retaining said housing relative to said body when said housing is pivoted  
6 to envelop said needle.

1 44. Safety intravenous infusion assembly to prevent a contaminated needle  
2 of said infusion device from being exposed to the environment, comprising:

3 a body of said infusion device having an end whereto said needle is  
4 attached;

5 a housing flexibly attached to said body, said housing being pivotable to  
6 a position in substantial alignment along the longitudinal axis of said body for  
7 enveloping said needle.

1 45. Safety intravenous infusion assembly of claim 44, further comprising:

2 locking means integrated to said housing for fixedly retaining said needle  
3 within said housing once said needle is enveloped by said housing.

1 46. Safety intravenous infusion assembly of claim 45, wherein said locking  
2 means comprises a hook that retains said needle within said housing once said  
3 housing is pivoted substantially to said alignment position.

1 47. Safety intravenous infusion assembly of claim 44, further comprising:  
2 first locking means integrated to said end of said body; and  
3 second locking means integrated to said housing;  
4 wherein said first and second locking means coact with each other to  
5 fixedly hold said housing relative to said body when said housing is pivoted to  
6 said alignment position.